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Federal - State Cooperative
Snow Surveys and Water Supply Forecasts
for

ARIZONA



SOIL CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Data included in this report were obtained by the agency named above in cooperation with the Federal, State and local organizations listed on the last page of this report.

Jan. 15, 1954

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

Forecasts by U. S. Weather Bureau of total annual streamflow October-September, inclusive, at more than 300 gaging stations are issued monthly January through May in the publication WATER SUPPLY FORECASTS FOR THE WESTERN UNITED STATES.

Weather Bureau forecasts of runoff presented in that bulletin are computed from procedures based on mathematical analysis of the relation between precipitation and runoff.

The Weather Bureau bulletins may be secured by writing to:

Hydrologist in Charge River Forecast Center U. S. Weather Bureau 712 Federal Office Building Kansas City 6, Missouri

For current information on local river and flood conditions, reference should be made to the appropriate River District Office, listed below:

State of Arizona

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR

ARIZONA

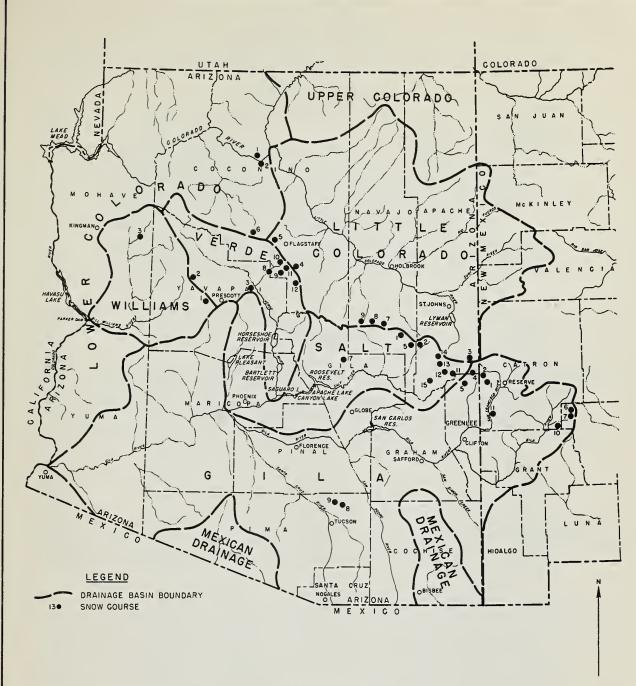
Report Prepared

by

W. E. Anderson - Snow Survey Leader

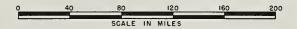
Soil Conservation Service 39 North Sixth Avenue Phoenix, Arizona





ARIZONA COOPERATIVE SNOW SURVEYS

SNOW COURSES AND DRAINAGE BASINS
JANUARY 1954



NUMBER	NAME	SEC TWP	RGE*	ELEVATION	
LITTLE COLORADO RIVER					
1. Forest Dale 2. McNory 3. Nutrioso 4. Mormon Loke 5. Fort Volley 7. Gentry 8. Heber 9. Conyon Creek 11. Mormon Mountoin 12. Happy Jack		. 14	. 8E	7,200 8,500 7,350 7,600 7,600 7,500	
	WILLIAMS RIVER				
Iron Springs Comp Wood Willow Ranch		. 316N	. 6W		
	GILA RIVER	21 45	20/1/**	9,000	
1. Frisco Divide (N.M.) 2. Stote Line (N.M.) 3. Nutrioso 4. Coronodo Troil 5. Beaver Head 6. Toylor Creek (N.M.) 7. Inman (N.M.) 8. Rose Conyon 9. Bear Wallow 10. Block Conyon (N.M.)		. 6 6S	. 10W **		
	VERDE RIVER				
1. Iron Springs 2. Camp Wood 3. Mingus Mountoin 4. Morman Loke 5. Fort Volley 6. Chalender 8. Munds Pork 9. Cosner Park 10. Antelope Pork 11. Mormon Mountain 12. Hoppy Jock		. 3 16N	. 6W	7,500	
1. Forest Dale	<u> </u>	. 2 9N	. 21E	6,000	
2. McNary 3. Nutrioso 4. Coronodo Troil 5. Milk Ronch 7. Gentry 8. Heber 9. Conyon Creek 11. Big Loke Knoll 12. Maverick Ford 13. Baldy 14. Ft. Apoche 15. Pocheto 17. Workmon Creek	At	. 14 8N	. 23E		
LOWER COLORADO RIVER 1. Bright Angel					
Bright Angel Grond Conyon Fort Valley Cholender		. 21 30N	. 4E	7,500	

^{*} All in Gilo and Solt River Bose and Meridian except where otherwise indicated.

^{**} New Mexico Principal Meridian

WATER SUPPLY OUTLOOK

ARIZONA

January 15, 1954

Precipitation

Weather Bureau reports show 1953 to be, on an average, the third driest year of record. Rainfall has been only approximately 57% of normal, and the deficiency was especially marked during the fall months when normal precipitation usually serves to prime the soil and facilitate runoff later. Many mountain springs usually reliable have gone dry or are producing only unusually low flows.

Snow Cover

The snow cover is below normal on all watersheds. Maximum snow reported is on the Ft. Apache snow course where there is a snow depth of 23.6 inches with a water content of 4.0 inches.

In the Verde and Salt River watersheds the snow which fell January 12, 13 and 14 was very light, powdery and dry. It amounted to approximately 7 inches total fall, most of which melted right off next day except possibly in higher areas or protected spots. It fell on dry soil and will do little more than wet the ground surface. snow survey truck stirred up a dust cloud right in the falling snow. Dry dirt and dust were under the snow where it was on the ground. This snow will not add materially to water prospects but will instead go entirely into the soil to make up for precipitation we didn't have last fall. Previously some 4 inches to 8 inches of snow had fallen over much of the Arizona basins but the only places there was any left were very high or very well protected spots where drifts had accumulated -- and then only spotty. Most snow found was around Baldy and Big Lake where a total of some 20-24 inches lay on the ground. Clear sunny weather prevailed at the time and even there the soil was abnormally dry under the snow. Conditions are about the same on all the watersheds.

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Runoff and Reservoir Storage

The first seasonal runoff forecasts will be made in the February l bulletin. There is still time for the accumulation of satisfactory snow packs, but unusually heavy storms will have to occur in the very near future if the present critically dry conditions are to be relieved and any substantial runoff results.

			SNOW COVER MEASUREMENTS						
				1954	DITON OC	Past Record			
DRAINAGE BASIN and			Date of	Snow Depth	Water		Conte	nt (In.)	Years of
SNOW COURSE	No.	Elev.	Survey	(In.)	(In.)	1953	1952	Average	Record
GILA RIVER			. /						
Frisco Divide	1	8,000	1/12	0.8	0.2	2.0	2.0	1.7	14
State Line	2	8,000	1/12	0.0	0.0	2.2	2.4	2.2	14
Nutrioso	3	8,500	1/15	2.7	0.8	0.8	2.6	1.8	14
Coronado Trail	4	8,000	1/15	3.0	0.6	2.5	3.6	2.7	14
Beaver Head	5	8,000	1/15	7.2	1.1	3.7	4.0	2.7	13
Taylor Creek	6	7,850	1/15	T	T	0.0	0.0	0.6	10
Inman	7	7,800	1/15	T	T	0.0	0.0	0.5	7
Rose Canyon	8	7,300	1/15	7.5	1.2	0.0	0.0	0.6	6
Bear Wallow	9	8,100	1/15	8.6	1.4	3.9	0.0	2.7	6
Black Canyon	10	6,790	1/15	T	T	0.0	***	0.0	1
Mogollon	11	7,000	1/15	4.4	1.6	0.0	-	0.0	1
SALT RIVER			n /a -				_		
Forest Dale	1	7,000	1/15	4.4	1.4	***	T	0.8	13
McNary	2	7,200	1/15	4.4	1.7	_	2.6	2.3	13
Nutrioso	3	8,500	1/15	2.7	0.8	0.8	2.6	1.8	14
Coronado Trail	4	8,000	1/15	3.0	0.6	2.5	3.6	2.7	14
Milk Ranch	5	7,000	1/15	3.4	1.3	-	T	1.2	12
Gentry	7	7,600	1/13	4.0*	0.2*	1.9	-	2.1	3
Heber	8	7,600	1/13	4.0*	0.2*	2.4	-	2.1	3
Canyon Creek	9	7,500	1/13	4.0*	0.2*	3.0		2.5	3
Maverick Fork	12	9,020	1/14	15.5	2.8	4.5	12.1	5.5	4
Baldy	13	9,125	1/14	19.6	3.9	3.9	9.1	4.4	4
Ft. Apache	14	9,160	1/14	23.6	4.0	3.6	9.5	4.4	4
Pacheta	15	7,800	1/15	6.0	1.0	4.9	6.7	4.1	4
Workman Creek	17	6,900	1/13	9.9	2.0	6.3	3.1	4.7	2
VERDE RIVER		0.000	2 /35	7.0	0 54	0.0	2 C	. 1	0
Iron Springs	1	6,200	1/15	7.2	0.5*	0.0	2.5	1.1	8
Camp Wood	2	5,700		11.3		0.0	0.1	0.9	8
Mingus Mountain				5.9	0.6	0.0	1.4	0.8	7
Mormon Lake	4	7,350		0.8*		2.5	5.8		7
Fort Valley	5	7,350	1/15	4.2					7
Chalender	6	7,100	1/15	6.7		3.3	5.6		7
Munds Park	8	6,500	1/12	0.8*		→	2.1	1.9	3
Casner Park	9	6,930		1.2*			5.8		4
Mormon Mountain			1/12	2.0*		5.0			4 2
Happy Jack	12	7,630			_	gam	6.6	3.4	
Gaddes Canyon	13	7,600	1/14	9.8	1.2	-	***	-	0

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ARIZONA SNOW SURVEYS JANUARY 15, 1954

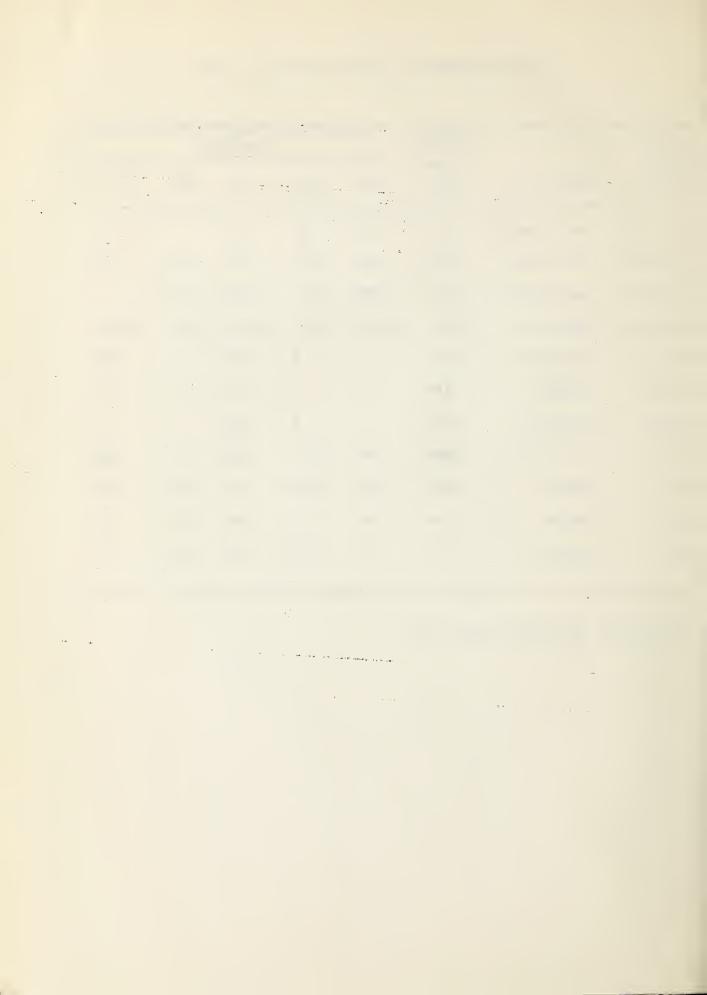
			SNOW COVER MEASUREMENTS						
			1954			Past Record			
DRAINAGE BASIN and SNOW COURSE	No.	Elev.	Date of Survey	Snow Depth (In.)	Water Content (In.)	Water 1953	Conte	nt (In.) Average	Years of Record
DNOW OCORDE	110	DIGA.	Sur vey	(тп•)	(1110)	1990	1932	Average	necora
WILLIAMS RIVER									
Iron Springs	1	6,200	1/15	7.2	0.5*	0.0	2.5	1.1	8
Camp Wood	2	5,700	1/15	11.3	1.2	0,0	0.1	0.9	8
Willow Ranch	3	5,000	,	No Re		0.0	0.8	1.5	8
TOWER GOLDING	D Tarr				•				
	RIVE	-	1/15	9.6	1.7	<i>c</i> 0	700	D 4	0
Bright Angel	1	8,400	1/15 1/15	4.3	0.8	6.2	17.2	7.4	6
Grand Canyon Fort Valley	2 5	7,500 7,350	1/15	4.2	0.4	1.5 2.4	3.0 6.4	2.4 2.8	6 7
Chalender	6	7,100	1/15	6.7	0.5	3.3	5.6	3.3	7
OliaTelidel	O	7,100	1/10	0.7	0.0	0.0	3,0	0.0	,
LITTLE COLORADO	RIV								
Forest Dale	1	7,000	1/15	4.4	1.4	-	T	0.8	13
McNary	2	7,200	1/15	4.4	1.7	~	2.6	2.3	13
Nutrioso	3	8,500	1/15	2.7	0_8	0.8	2.6	1.8	14
Mormon Lake	4	7,350	1/12	*8•0	T*	2.5	5.8	3.6	7
Fort Valley	5	7 , 350	1/15	4.2	0.4	2.4	6.4	2.8	7
Gentry	7	7,600	1/13	4.0*	0.2*	1.9	-	2.1	3
Heber	8	7,600	1/13	4.0*	0.2*	2.4	***	2.1	3
Canyon Creek	9	7,500	1/13	4.0*	0.2*	3.0	-	2.5	3
Mormon Mountain		7,500	1/12	2.0*	0.2*	5.0	9.0	4.9	4
Happy Jack	12	7,630	Measure	ement De	rayea	-	6.6	3.4	2

^{*} Estimated Quantities

STATUS OF RESERVOIR STORAGE JANUARY 15, 1954

BASIN		USABLE CAPACITY	THO	THOUSAND ACRE FEET IN STORAGE ABOUT JANUARY 15				
and STREAM	RESERVOIR	(Thous. A.F.)	1954	1953	1952	1951	10-Yr. Ave. 1942-1951	
Agua Fria	Lake Pleasant	178	32	82	104	6	12	
Colorado	Lake Havasu	688	603	57 9	59 7	620	555	
Colorado	Lake Mohave	1,810	1,673	1,602	1,580	1,186	-	
Colorado	Lake Mead	27,935	16,847	19,483	17,648	17,951	20,149	
Gila	San Carlos	1,285	0	4	36	0	185	
Verde	Bartlett	180	31	4	73	3	24	
Verde	Horseshoe	143	1	4	54	2	6*	
Salt	Roosevelt	1,382	634	1,019	180	3	495	
Salt	Apache	245	241	238	161	170	180	
Salt	Canyon	58	49	57	48	48	23	
Salt	Saguaro	70	14	32	33	38	14	

^{*}Average for years 1946 through 1951



LIST OF SNCW SURVEYORS

SNOW COURSE	SURVEYOR
Baldy	SCS and SRVWU
Bear Wallow	Wm. Highes
Beaver Head	Jess Burke
Black Canyon	E. Van Winkle
Bright Angel	Valentine
Camp Wood	Mrs. C. C. Merritt
Canyon Creek	SCS and SRVWU
Casner Park	SCS and SRVWU
Chalender	V. J. Schroeder
Coronado Trail	Frank Casanova
Forest Dale	Wm. Fair
Frisco Divide	J. B. Shumate
Ft. Apache	SCS and SRVWU
Fort Valley	A. P. Loska
Gaddes Canyon	Richard Enz
Gentry	SCS and SRVWU
Grand Canyon	C. E. Lehnert
Happy Jack	Emil Ryberg
Heber	SCS and SRVWU
Inman	F. M. Inman
Iron Springs	Ernest Saxby
Maverick Fork	SCS and SRVWU
Milk Ranch	Wm. Fair
Mingus Mountain	Richard Enz
Mogollon	J. R. Wray
Mormon Lake	M. F. Greaves
Mormon Mountain	SCS and SRVWU
Munds Park	SCS and SRVWU
McMary	Wm. Fair
Nutrioso	Frank Casanova
Pacheta	Foch Phillips
Rose Canyon	Wm. Hughes
State Line	J. B. Shumate
Taylor Creek	F. M. Inman
Willow Ranch	L. W. Miller
Workman Creek	C. L. Moore
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The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture

Forest Service
Apache Forest
Coconino Forest
Coronado Forest
Gila Forest
Kaibab Forest
Prescott Forest
Sitgreaves Forest
Southwestern Forest and Range Experiment
Station, Fort Valley, Arizona
Sierra Ancha Forest Experiment Station

Soil Conservation Service

Department of Commerce Weather Bureau Arizona Section

Department of Interior

Bureau of Reclamation

Region III

Geological Survey
Arizona District

Bureau of Indian Affairs Fort Apache Reservation

National Park Service Grand Canyon National Park

Gila Water Commissioner, Safford, Wrizona

IRRIGATION PROJECTS

Salt River Valley Water Users! Association, Phoenix, Arizona

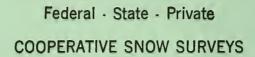
San Carlos Irrigation and Drainage District, Coolidge, Arizona

SOUTHWEST LUMBER MILLS, INC., McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their co-operation is gratefully acknowledged.

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"